ENGLISH

**Z10-3 edition 1**
Code: 005.860
005.861
005.862
005.863

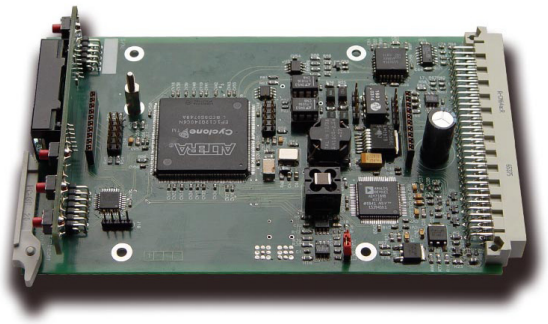
# DVD-12ef(s)²
# DVD-12ef(s)¹

SDI in/out with FSync and AES embedder
- for SRU rack frame
- standalone

USER MANUAL FOR USE AND MAINTENANCE

Read the instructions before using the device.

Keep this manual for periodic usage.



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Published: 16. april 2013.
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# WARRANTY

Dear User,
Thank you very much for purchasing our product.
Your purchase is a wise investment. The equipment you have purchased is manufactured with great care from high-quality parts and materials. It is designed to fully meet the needs according to specifications, if properly installed, used and maintained according to the enclosed instructions.

Any technical failure or deficiency that occurs during the warranty period specified on the invoice of the purchased equipment will be inspected and serviced by Sams elektronik doo or an authorized service center of the manufacturer, with the conditions set out in the warranty statement.

**THIS DEVICE IS INTENDED FOR PROFESSIONAL USE.**

**WARRANTY STATEMENT**

1. Product has declared characteristics. Within the warranty period, manufacturer ensures the removal of technical failures, product defects or replacement of products if declared characteristics of the product are changed.
2. If the goods are not delivered as specified with the contract, the consumer has the right to request from the manufacturer / service provider to eliminate the lack of conformity, without charge, repair or replacement, or to request an appropriate price reduction or terminate the contract.
3. Any repair or replacement must be made within a reasonable time without significant inconvenience to the consumer, taking into account the nature and the purpose for which the consumer has purchased the product.
4. The consumer has the right to terminate the contract, if he can realize the right to repair or replacement, or if the manufacturer / servicer has not completed repair or replacement within a reasonable time or if the manufacturer / servicer did not perform repair or replacement without significant inconvenience to the consumer.
5. The consumer may not terminate the contract if the lack of conformity of the product is negligible.
6. The product will function properly when used in accordance with the user manual.
7. Period of servicing the product is 6 years from the launch on the market.

The product purchased outside the territory of Serbia does not fall under the terms of this warranty, only to 1 year factory warranty from date of purchase.

**TERMS OF WARRANTY**

1. The warranty period begins on the date of sale referred in the invoice.
2. The buyer loses the right to warranty if the defect cause failure from not following the user manual instructions, improper installation, comes to mechanical damage during use, repairs and modifications by unauthorized persons, installation of non-genuine spare parts, and if the buyer does not comply with all warnings listed in the user manual.
3. The warranty is voided if the device is damaged during the disturbances from the environment, natural disasters (floods, hail, etc.), suffered an electric shock or lightning strike.

**IMPORTANT NOTES**

1. Be sure to thoroughly read the user manual.
   If you have any doubts about the instructions, contact the technical support of the manufacturer.
2. Before contacting for technical help, please make sure that are provided with all necessary conditions for normal operation.
3. If the malfunction or defect in the device does not eliminate within a reasonable time from the date of failure, the warranty period shall be extended for as many days as the unit is in service.
4. For all maintenance interventions shall solely be authorized services listed in this Warranty Certificate.

# SAFETY WARNINGS FOR SRU RACK FRAME

IMPORTANT SAFEY

## WARNING

TO AVOID RISK OF FIRE OR ELECTRIC SHOCK
DO NOT EXPOSE THE UNIT TO MOISTURE OR RAIN

The symbol "lightning in a triangle" is to alert the user to the presence of high voltage. In poor conditions the user may be exposed to shock.

The symbol "exclamation mark in a triangle" is to alert the user to comply by the terms of use in user's manual, which is supplied with the device.

CLASS I DEVICE
Grounding is connected to the chassis of the device.
The power supply is protected with fuse against overload.

**DECLARATION OF CONFORMITY for product:**
SRU RACK FRAME WITH POWER SUPPLY (PSU-212) WITH CORRESPONDING MODULES AND BACK CONNECTORS
The product is designed and manufactured according to the following regulations:

- Electromagnetic Compatibility Directive (EMC)
- Low Voltage Directive (ELV)

Documentation confirming statements can be obtained on written request for review.

# WARNING

TO AVOID ELECTRIC SHOCK, DO NOT OPEN COVER.
DEVICE MAINTENANCE REQUIRES PROFESSIONAL PERSON AUTHORIZED BY THE MANUFACTURER.

1. Read all safety and operating instructions before using the device.
2. Keep all safety and operating instructions.
3. Follow the instructions from the user manual.
4. Do not upgrade device, except in the case advised by the manufacturer.
5. Do not use the device in the presence of water and / or moisture.
6. Do not pour water or moisten the device with any type of liquid.
7. Openings on device are provided for ventilation.
8. Do not block air flow through the ventilation openings.
9. This product is powered by AC ~ 230V ± 10%, 50Hz.
10. This product is equipped with a three-wire cord with grounding.
11. This device is equipped with a protective fuse in the power outlet. Do not bypass fuse.
12. Do not replace the fuse. Replacement can be made by a person authorized by the manufacturer.
13. Do not bend the power cord so that it can be damaged.
14. Connect connectors as in the enclosed instructions. Deviations from the allowed values predicted for the inputs and outputs of the device can cause severe damage and warranty void.
15. Do not use the device in an environment that contains flammable or explosive materials in any physical state.
16. Turn off the power corde before cleaning. Do not use liquid, aerosol or flammable cleaners. Use only a dry cloth.
17. Servicing is performed by a qualified person. Removing the cover user is exposed to high voltages.
18. Never use the device when the cover is open and the device is powered on.
19. Do not expose to extreme high or low temperatures.
20. Do not expose to sudden temperature changes.
21. Call service in the following cases:
    - The power cord or plug is damaged
    - Liquid or foreign objects is inside the device
    - The machine is exposed to water and moisture
    - The device does not function according to specification
    - The unit has been dropped or damaged
    - The characteristics are significantly changed
22. Use only specified replacement parts.
23. Professional person authorized by the manufacturer must check the device after completion of service.
24. Allow a free rack unit (1RU) above and below the device for ventilation or put rack fan under the device.

Pictures and drawings listed in this user manual are for information purposes only and may differ from the actual device. Design and specifications of the device may change without prior notice.

# TECHNICAL SUPPORT AND SERVICE

Sams elektronik has made every effort to ensure that the equipment works in perfect condition. In the event that problems that occur can not be resolved, or if you have any questions regarding this equipment or information about other products produced from Sams elektronik, contact your local sales representative or call Sams elektronik directly through one of the ways listed below:

Sales: +381 11 3806 254
Technical support: +381 11 2402 212
Service: +381 11 4056 051
Email:
Sales - sasa@sams.rs
Technical support and service - sams@sams.rs

Web site: www.sams.rs

Address:
SAMS ELEKTRONIK d.o.o.
48 Zivka Davidovica st
11050 Belgrade
Serbia

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# UNPACKING AND INSTALLATION

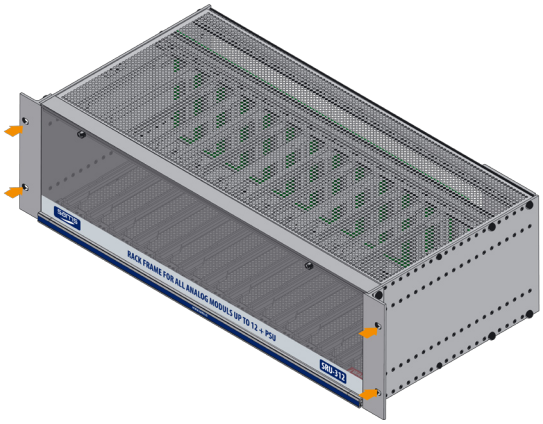
**The box contains:**

- Module
- Back connector (optional)
- Protective pad for SRU rack frame (optional)
- M2.5x6/7985 screw (optional)
- SRU rack frame (optional)
- Power corde for SRU rack frame (optional)
- User manual (optional)

Before use, check the contents of the box. For any deficiency report to the seller or the manufacturer of the product.
**DEVICE IS INSULATED BY PROTECTIVE WRAP AND PACKED IN A CARDBOARD BOX.**
**DEVICE IS SENSITIVE TO SHAKES AND DROPS. HANDLE WITH CARE DURING TRANSPORT AND ASSEMBLY.**
Check if the product is damaged during transport.

**PROCEDURES FOR SAFE USE OF THE DEVICE:**

1. - If the device is not supplied with SRU rack frame, remove the protective wrap from the device. If the device is supplied with SRU rack frame, remove the protective wrap from the chassis.
   - For devices that are AC 230V / 50Hz powered, the device is supplied with power cord.
   - Use only power corde that comes with the device.
2. SRU rack frame is mounted in a 19" special-purpose rack cabinets designed for this type of device. Screw device with four screws. Screws for fastening are not supplied with the device.
3. The device must be connected to ground. A device that is not connected to the grounding does not function properly according to factory declarations and can cause adverse effects on users and other equipment.
4. Strictly comply to all steps for proper connection of devices in the system.
5. On the SRU rack frame are 3 types of mass (CHASSIS, MAINS and 0V). The factory, all three are connected. According to the user's needs, the masses can be switched over between them.



Places for fastening

# MAINTENANCE

The system maintains only person authorized by Sams elektronik doo.
Any voluntarily opening device, upgrading or servicing is strictly prohibited and is subject to warranty void, and the possibility of injury.

# REMOVAL AND STORAGE

1. Before dismantling the device, switch off the power, remove the power cord and remove all other connectors.
2. Remove the four screws for fastening.
3. Remove the device from rack cabinet.
4. Wrap the machine in the foil to protect it from dust. Package it in a box.
5. The device must be stored in a room without moisture.

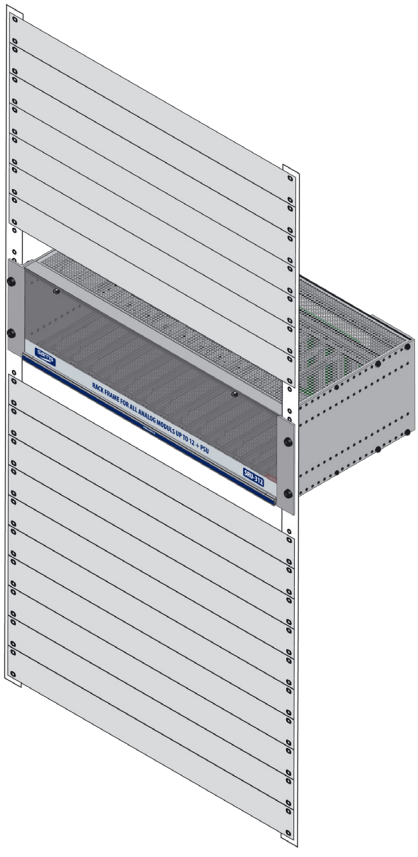
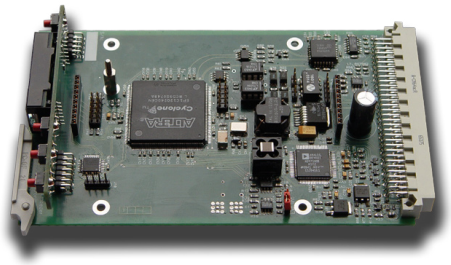


Illustration - mounted device

# DESCRIPTION



## DVD-12ef-2

SDI Frame sync and 2ch AES/EBU embedder

- Broadcast quality
- Synchronize digital video and embeding digital audio
- EDH processing
- Input signal presence detection
- Pass, "Freezing" or broadcast test in the case of incorrect video input
- Easy setup with local control and LCD display
- Audio embedder
- Balanced / unbalanced digital audio inputs
- 24bit / 48kHz sampling and processing

DVD-12ef-2 have a frame synchronizer that asynchronous video signal recorded in the memory and reads it synchronized with an external reference, as well as other settings. It is useful for sychronizing large number of external signals with signals from the TV station, or the capture of material from an amateur into a professional format. DVD-12ef-2 is synchronous switch tolerant (RP 168), for a smooth transfer without unpleasant visual effects when switching between two sources. DVD-12ef-2 is high quality embedder, designed to insert two 24-bit digital audio signals into digital video. The device has a level adjustment, change the audio phase and selection of channel place. The module is placed in the SRU-306 3RU chassis with capacity of 6 modules. Also, the device is available in standalone version.

## TECHNICAL SPECIFICATIONS

Specifications and designs are subject to change without notice

### GENERAL INFORMATION

- Code: ..... 005.860
- Weight: ..... 0.4 Kg
- Type: ..... module
- Dimensions: ..... 100 x 160mm
- Required: ..... SRU rack frame, back panel BCVA-84
- Delivery includes: ..... device, user manual

### DIGITAL INPUT

- Number: ..... 1, BNC female
- Signal type: ..... Serial digital (SMPTE259M)
- Impedance: ..... 75Ω
- Level: ..... 800mV ± 10%

### DIGITAL OUTPUT

- Number: ..... 1, BNC female
- Signal type: ..... Serial digital (SMPTE259M)
- Impedance: ..... 75Ω
- Jitter: .. < 0.2UI (Tipical 0.1UI @ Color Bar, 10Hz filter mode)
- Level: ..... 800mV ± 10%

### AES3 110Ω or 75Ω INPUT

- Number: ..... 2
- Connector: ..... 3-pin terminal strip or BNC female*
- Impedance: ..... 110Ω or 75Ω
- Max level: ..... 7V p-p
- Min level: ..... 0.2V p-p

* NOTE: AES and SPDIF are not used at the same time

### REFERENCE INPUT

- Analog BB 300 mV: ..... 1, BNC

### OUTPUT PERFORMANCE

- Bit resolution: ..... 10/12bit processing
- Black offset: ..... Self adjusting
- H adjustment range: ..... 0-64μs in 37ηs steps
- V adjustment range: ..... 0-625 lines in 1 line step

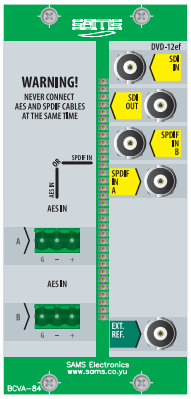
### POWER

- Voltage: ..... 2 x 12V AC
- Power: ..... 5W

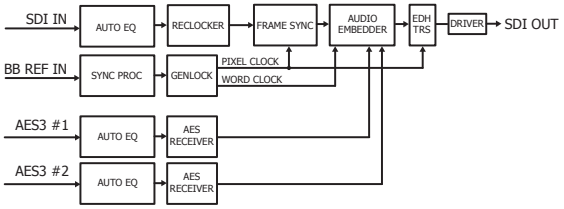
### TEMPERATURE

- Performance: ..... 5-40°C
- Operating: ..... 0-50°C

### BACK CONNECTOR BCVA-84




### BLOCK DIAGRAM

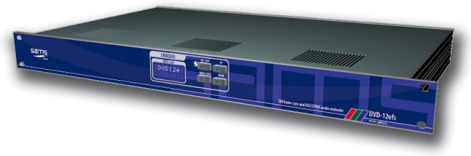



### ORDERING INFORMATION

| Code | Name | Description |
|---|---|---|
| 005.860 | DVD-12ef-2 | SDI FS + 2CH AES embedder |
| 001.510 | BCVA-84 | Back connector |
| 001.605 | SRU-306 | Rack frame for 6 modules |

# DVD-12efs-2

SDI Frame sync and 2ch AES/EBU embedder



- Broadcast quality
- Synchronize digital video and embeding digital audio
- EDH processing
- Input signal presence detection
- Pass, "Freezing" or broadcast test in the case of incorrect video input
- Easy setup with local control and LCD display
- Audio embedder
- Balanced / unbalanced digital audio inputs
- 24bit / 48kHz sampling and processing

DVD-12efs-2 have a frame synchronizer that asynchronous video signal recorded in the memory and reads it synchronized with an external reference, as well as other settings. It is useful for sychronizing large number of external signals with signals from the TV station, or the capture of material from an amateur into a professional format. DVD-12efs-2 is synchronous switch tolerant (RP 168), for a smooth transfer without unpleasant visual effects when switching between two sources. DVD-12efs-2 is high quality embedder, designed to insert two 24-bit digital audio signals into digital video. The device has a level adjustment, change the audio phase and selection of channel place.

front side

rear side

## TECHNICAL SPECIFICATIONS

Specifications and designs are subject to change without notice

### GENERAL INFORMATION

- Code: ..... 005.861
- Weight: ..... 1.5 Kg
- Type: ..... 1RU rack frame
- Dimensions: ..... 1RU x 19" x 150mm
- Delivery includes: ..... device, power corde, user manual

### DIGITAL INPUT

- Number: ..... 1, BNC female
- Signal type: ..... Serial digital (SMPTE259M)
- Impedance: ..... 75Ω
- Level: ..... 800mV ± 10%

### DIGITAL OUTPUT

- Number: ..... 1, BNC female
- Signal type: ..... Serial digital (SMPTE259M)
- Impedance: ..... 75Ω
- Jitter: .. < 0.2UI (Tipical 0.1UI @ Color Bar, 10Hz filter mode)
- Level: ..... 800mV ± 10%

### AES3 110Ω or 75Ω INPUT

- Number: ..... 2
- Connector: ..... XLR female or BNC female*
- Impedance: ..... 110Ω or 75Ω
- Max level: ..... 7V p-p
- Min level: ..... 0.2V p-p

* NOTE: AES and SPDIF are not used at the same time

### REFERENCE INPUT

- Analog BB 300 mV: ..... 1, BNC

### ORDERING INFORMATION

| Code | Name | Description |
|---|---|---|
| 005.861 | DVD-12efs-2 | SDI FS + 2CH AES embedder |

### OUTPUT PERFORMANCE

- Bit resolution: ..... 10/12bit processing
- Black offset: ..... Self adjusting
- H adjustment range: ..... 0-64µs in 37ηs steps
- V adjustment range: ..... 0-625 lines in 1 line step

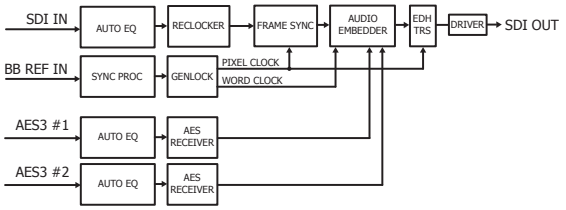
### POWER

- Voltage: ..... ~230V AC ± 10%
- Power: ..... 30W
- Frequency: ..... 50Hz
- Overload protection: ..... front Mounted Circuit Breaker

### TEMPERATURE

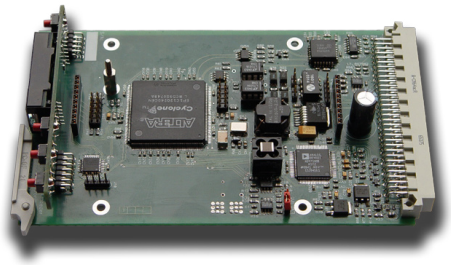
- Performance: ..... 5-40°C
- Operating: ..... 0-50°C

### BLOCK DIAGRAM



# DVD-12ef-1

SDI Frame sync and 1ch AES/EBU embedder



- Broadcast quality
- Synchronize digital video and embeding digital audio
- EDH processing
- Input signal presence detection
- Pass, "Freezing" or broadcast test in the case of incorrect video input
- Easy setup with local control and LCD display
- Audio embedder
- Balanced / unbalanced digital audio inputs
- 24bit / 48kHz / 1 ch sampling and processing

DVD-12ef-1 have a frame synchronizer that asynchronous video signal recorded in the memory and reads it synchronized with an external reference, as well as other settings. It is useful for sychronizing large number of external signals with signals from the TV station, or the capture of material from an amateur into a professional format. DVD-12ef-1 is synchronous switch tolerant (RP 168), for a smooth transfer without unpleasant visual effects when switching between two sources. DVD-12ef-1 is high quality embedder, designed to insert one 24-bit digital audio signal into digital video. The device has a level adjustment, change the audio phase and selection of channel place. The module is placed in the SRU-306 3RU chassis with capacity of 6 modules. Also, the device is available in standalone version.

## TECHNICAL SPECIFICATIONS

Specifications and designs are subject to change without notice

### GENERAL INFORMATION

- Code: ..... 005.862
- Weight: ..... 0.4 Kg
- Type: ..... module
- Dimensions: ..... 100 x 160mm
- Required: ..... SRU rack frame, back panel BCVA-84
- Delivery includes: ..... device, user manual

### DIGITAL INPUT

- Number: ..... 1, BNC female
- Signal type: ..... Serial digital (SMPTE259M)
- Impedance: ..... 75Ω
- Level: ..... 800mV ± 10%

### DIGITAL OUTPUT

- Number: ..... 1, BNC female
- Signal type: ..... Serial digital (SMPTE259M)
- Impedance: ..... 75Ω
- Jitter: .. < 0.2UI (Tipical 0.1UI @ Color Bar, 10Hz filter mode)
- Level: ..... 800mV ± 10%

### AES3 110Ω or 75Ω INPUT

- Number: ..... 1
- Connector: ..... 3-pin terminal strip or BNC female*
- Impedance: ..... 110Ω or 75Ω
- Max level: ..... 7V p-p
- Min level: ..... 0.2V p-p

* NOTE: AES and SPDIF are not used at the same time

### REFERENCE INPUT

- Analog BB 300 mV: ..... 1, BNC

### OUTPUT PERFORMANCE

- Bit resolution: ..... 10/12bit processing
- Black offset: ..... Self adjusting
- H adjustment range: ..... 0-64μs in 37ηs steps
- V adjustment range: ..... 0-625 lines in 1 line step

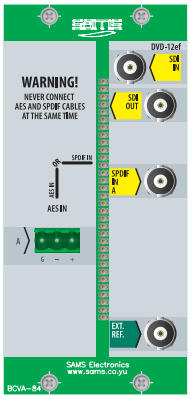
### POWER

- Voltage: ..... 2 x 12V AC
- Power: ..... 5W

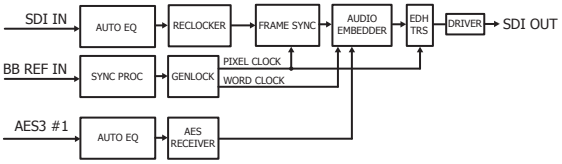
### TEMPERATURE

- Performance: ..... 5-40°C
- Operating: ..... 0-50°C

### BACK CONNECTOR BCVA-84




### BLOCK DIAGRAM

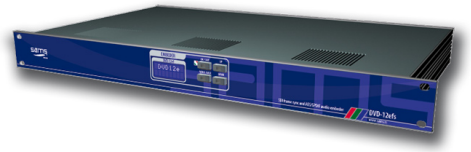



### ORDERING INFORMATION

| Code | Name | Description |
|---|---|---|
| 005.862 | DVD-12ef-1 | SDI FS + 1CH AES embedder |
| 001.510 | BCVA-84 | Back connector |
| 001.605 | SRU-306 | Rack frame for 6 modules |

# DVD-12efs-1

SDI Frame sync and 1ch AES/EBU embedder



- Broadcast quality
- Synchronize digital video and embeding digital audio
- EDH processing
- Input signal presence detection
- Pass, "Freezing" or broadcast test in the case of incorrect video input
- Easy setup with local control and LCD display
- Audio embedder
- Balanced / unbalanced digital audio inputs
- 24bit / 48kHz / 1 ch sampling and processing

DVD-12efs-1 have a frame synchronizer that asynchronous video signal recorded in the memory and reads it synchronized with an external reference, as well as other settings. It is useful for sychronizing large number of external signals with signals from the TV station, or the capture of material from an amateur into a professional format. DVD-12efs-1 is synchronous switch tolerant (RP 168), for a smooth transfer without unpleasant visual effects when switching between two sources. DVD-12efs-1 is high quality embedder, designed to insert one 24-bit digital audio signal into digital video. The device has a level adjustment, change the audio phase and selection of channel place.

front side

rear side

## TECHNICAL SPECIFICATIONS

Specifications and designs are subject to change without notice

### GENERAL INFORMATION

- Code: ..... 005.863
- Weight: ..... 1.5 Kg
- Type: ..... 1RU rack frame
- Dimensions: ..... 1RU x 19" x 150mm
- Delivery includes: ..... device, power corde, user manual

### DIGITAL INPUT

- Number: ..... 1, BNC female
- Signal type: ..... Serial digital (SMPTE259M)
- Impedance: ..... 75Ω
- Level: ..... 800mV ± 10%

### DIGITAL OUTPUT

- Number: ..... 1, BNC female
- Signal type: ..... Serial digital (SMPTE259M)
- Impedance: ..... 75Ω
- Jitter: .. < 0.2UI (Tipical 0.1UI @ Color Bar, 10Hz filter mode)
- Level: ..... 800mV ± 10%

### AES3 110Ω or 75Ω INPUT

- Number: ..... 1
- Connector: ..... XLR or BNC*
- Impedance: ..... 110Ω or 75Ω
- Max level: ..... 7V p-p
- Min level: ..... 0.2V p-p

* NOTE: AES and SPDIF are not used at the same time

### REFERENCE INPUT

- Analog BB 300 mV: ..... 1, BNC

### ORDERING INFORMATION

| Code | Name | Description |
|---|---|---|
| 005.863 | DVD-12efs-1 | SDI FS + 1CH AES embedder |

### OUTPUT PERFORMANCE

- Bit resolution: ..... 10/12bit processing
- Black offset: ..... Self adjusting
- H adjustment range: ..... 0-64µs in 37ηs steps
- V adjustment range: ..... 0-625 lines in 1 line step

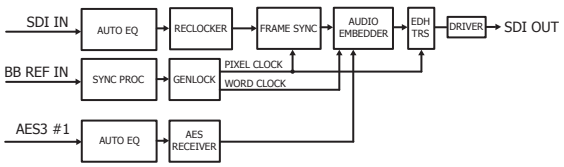
### POWER

- Voltage: ..... ~230V AC ± 10%
- Power: ..... 30W
- Frequency: ..... 50Hz
- Overload protection: ..... front Mounted Circuit Breaker

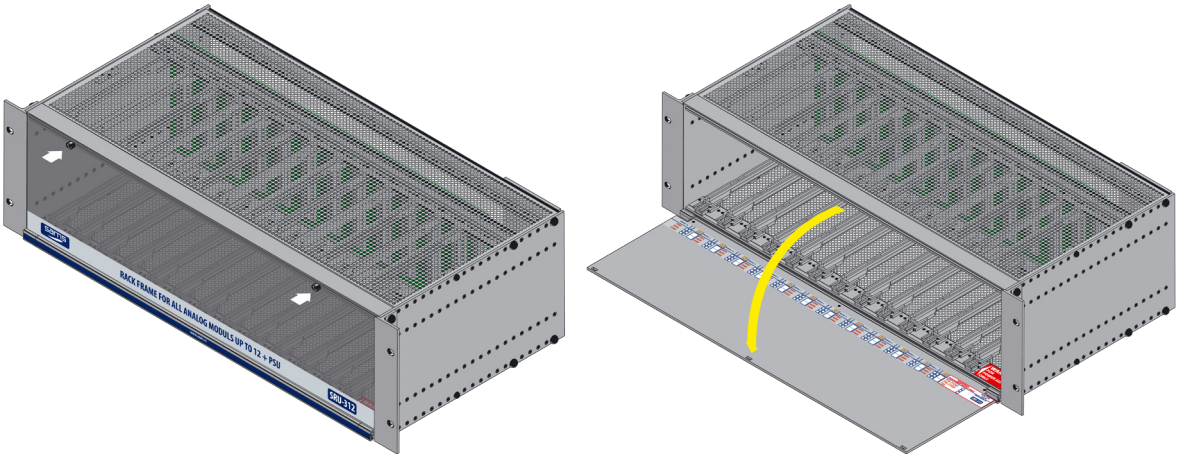
### TEMPERATURE

- Performance: ..... 5-40°C
- Operating: ..... 0-50°C

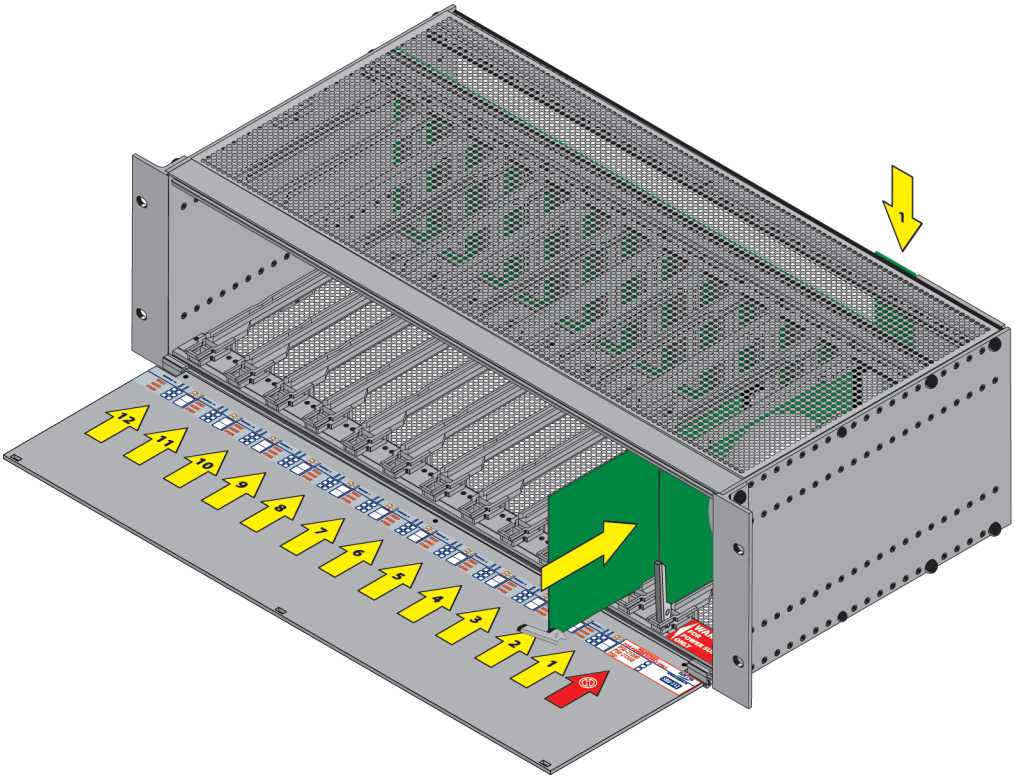
### BLOCK DIAGRAM



# MODULE INSTALATION IN SRU RACK FRAMES



- On the front side of rack frame, unscrew the screws.
- Open the door.



Make sure that the module is set to the correct place in relation to the back connector.

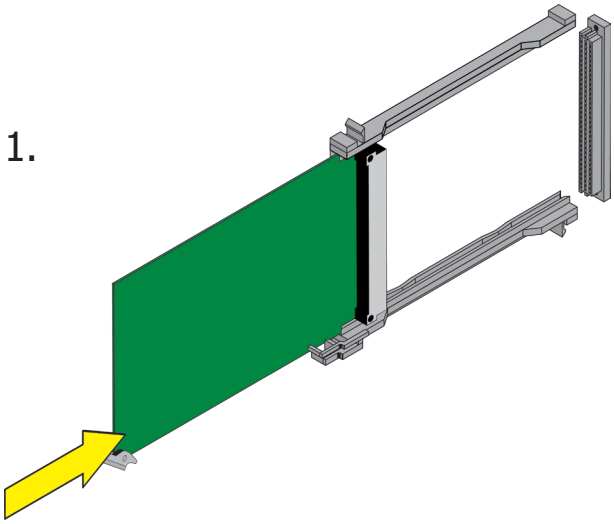
**BEFORE INSTALLING OR REMOVING THE MODULE FROM SRU, ALWAYS TURN OFF THE POWER**

Lock module with lever to the position.

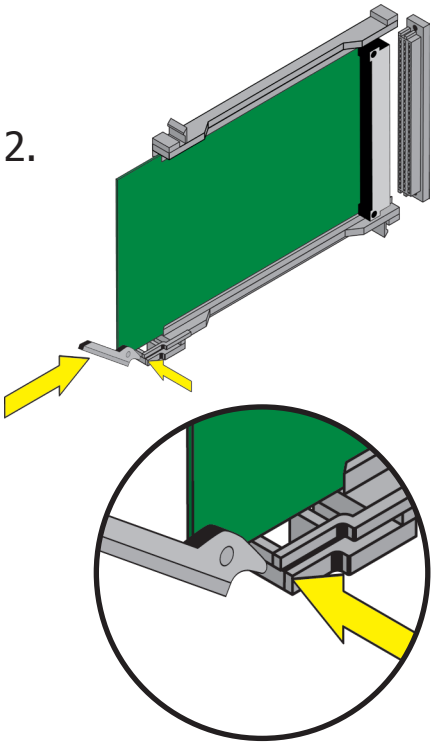
**NOTE: NEVER PLACE MODULE TO PLACE OF THE POWER SUPPLY MODULE!**

The label that indicates the place for power supply module

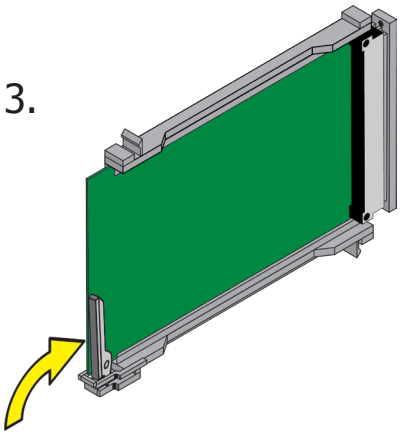
1.



2.

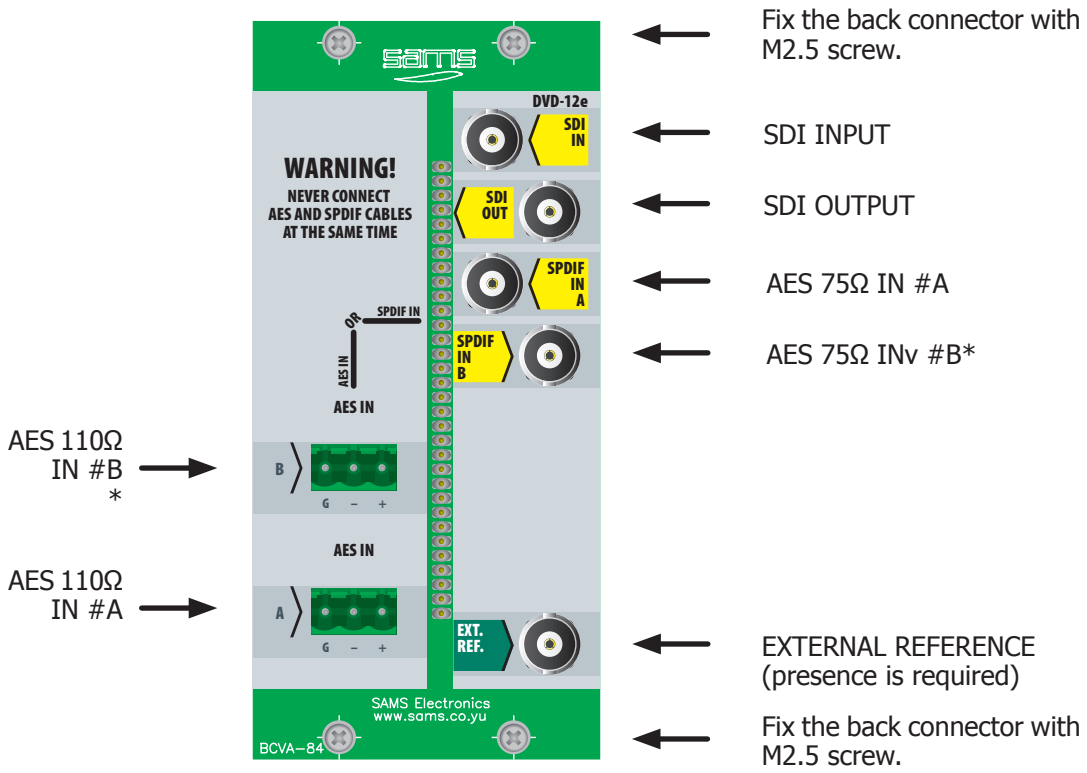


3.



1. The module set between the guides (not metal plate).
2. Locking lever mount behind the groove.
3. Push the lever to lock in an upright position. The module is locked.

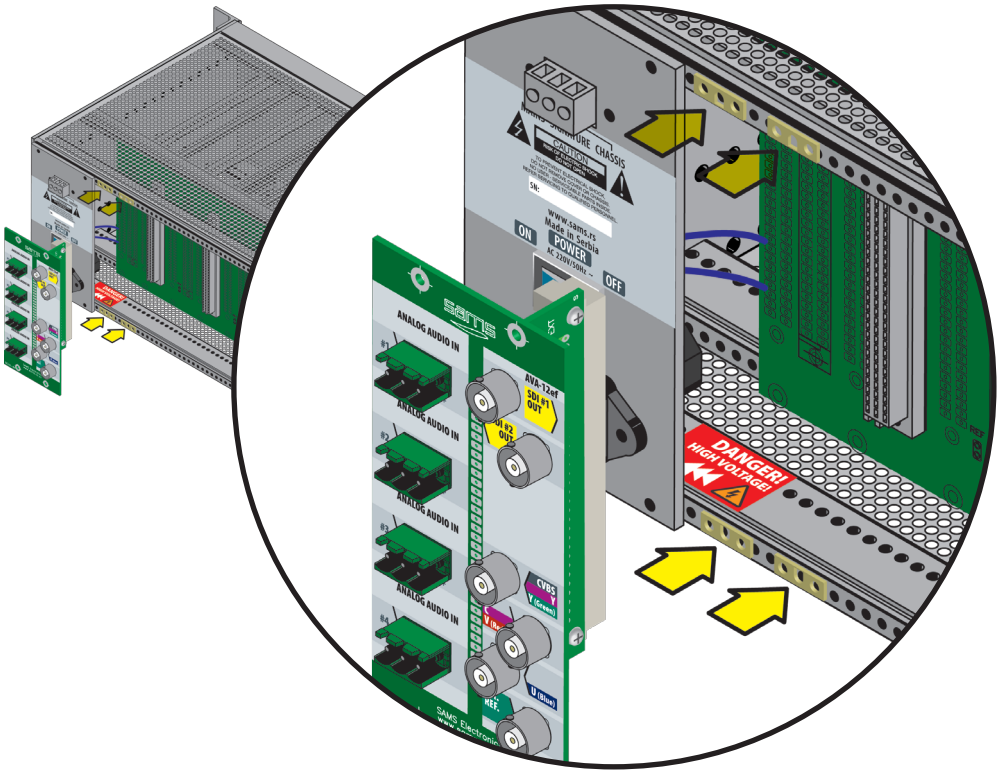
# BACK CONNECTORS



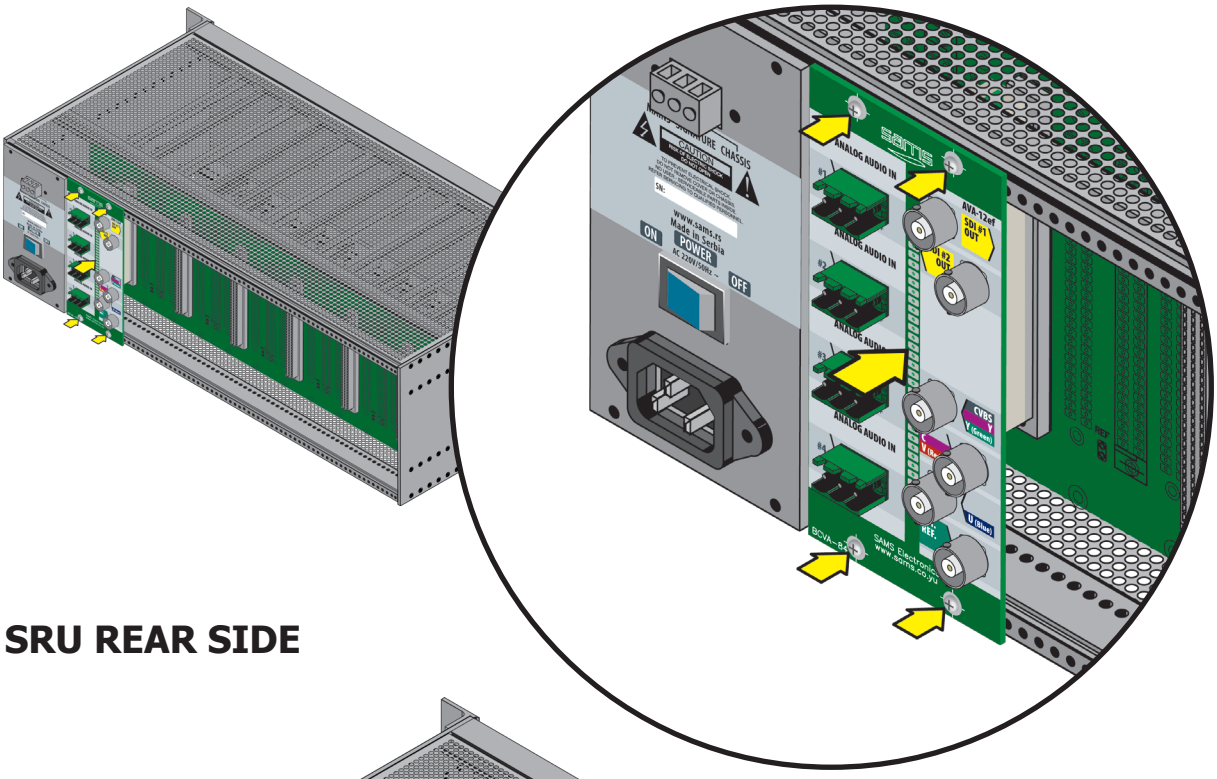

DVA-12ef

* Connector for B channel on DVD-12ef-1 is not present.

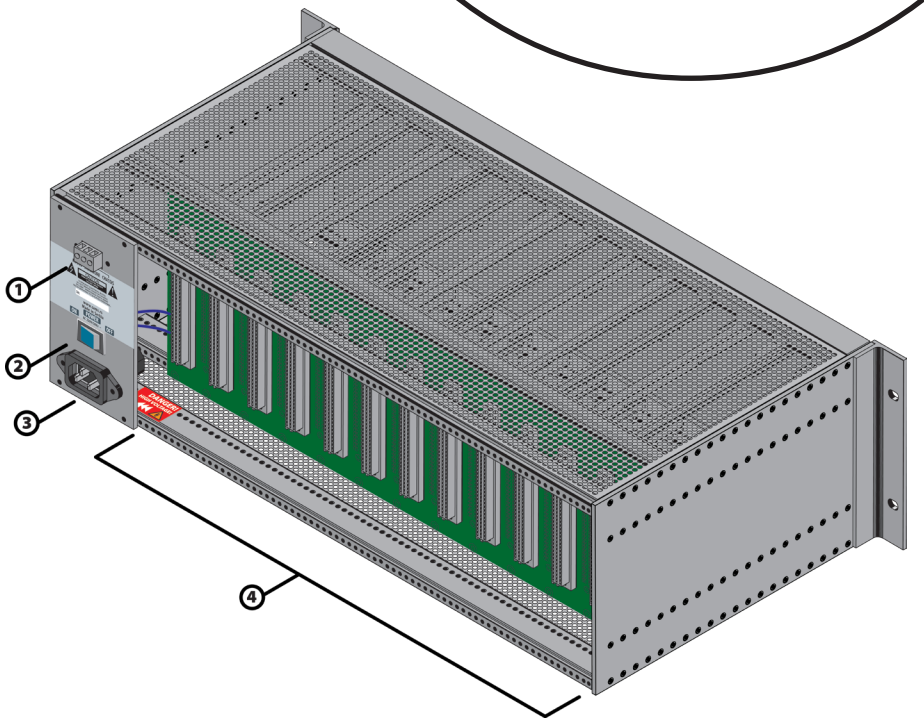
Be sure to install a protective pad before installing the back connectors.



Place the back connector. Fix the back connector with M2.5 screw.




## SRU REAR SIDE




Rear side view

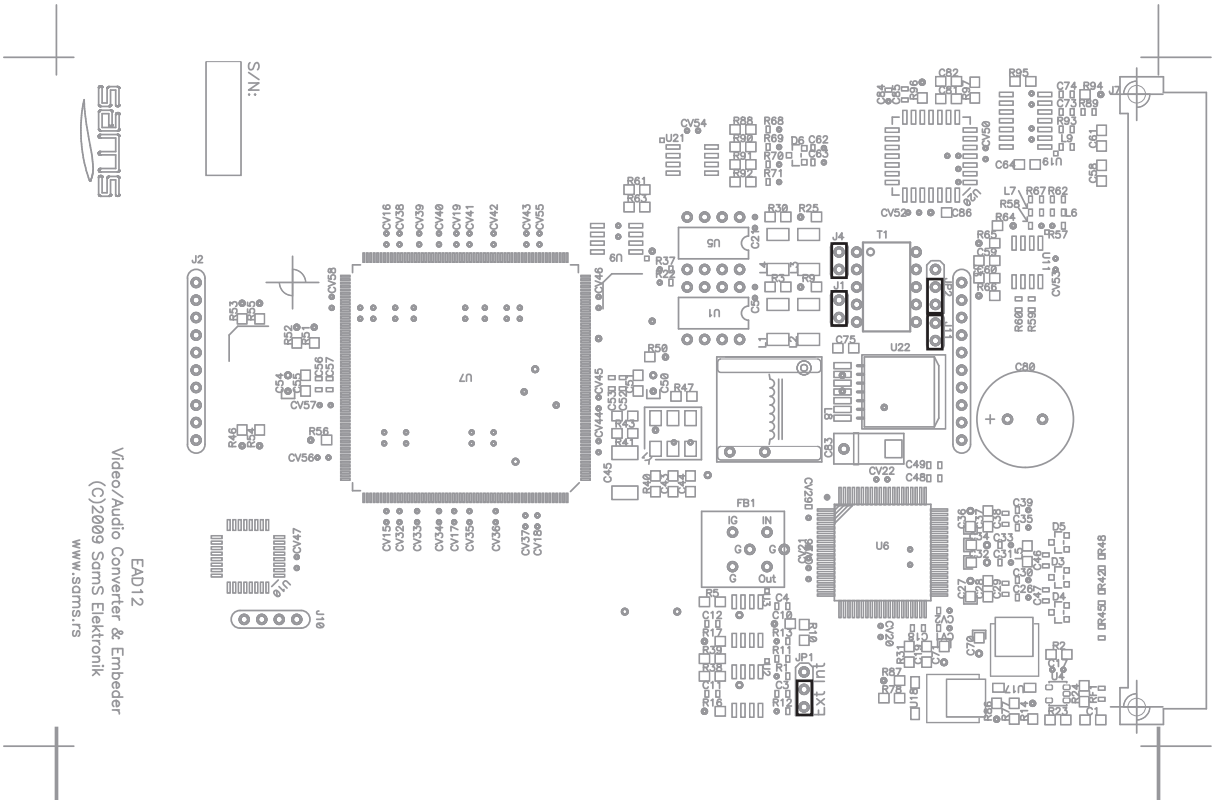
1. Mass
2. Power switch
3. The socket
4. Connections for back connectors

DO NOT INSERT SHARP METAL OBJECTS OR FINGERS INTO THE SPACE BEHIND THE POWER PANEL!

THE SIGN "LIGHTNING IN A TRIANGLE" IS TO ALERT THE USER TO THE PRESENCE OF LIFE-THREATENING HIGH POWER.

LABEL IS PLACED NEXT TO POWER PANEL.

# PCB WITH THE LAYOUT OF ELEMENTS




NOTE: For inputs with 110Ω jumpers set to J11 and JP2. For 75Ω jumpers to set the J1 and J4. This option is only available on the modules.

# INSTALLATION (STANDALONE)

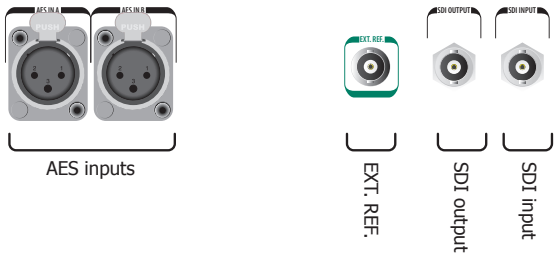
For the best signal quality use:
- Belden 8281 or better coaxial cable for analog video
- Belden 1694A or better coaxial cable for digital video

Connect the power cord.
The device works only on AC ~ 230 V / 50 Hz. ①

Rear side

Connect all necessary connectors
before the unit is turned on. ②

Turn on the device
by pressing switch. ③

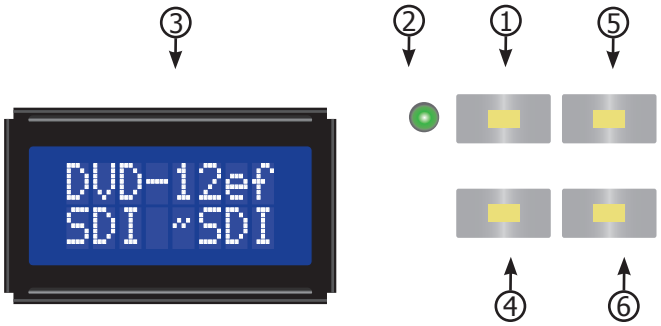



NOTE: Presence of External Reference is required!

Front side

④ If everything is OK, the LED will glow green.

## THE DEVICE FUNCTIONS

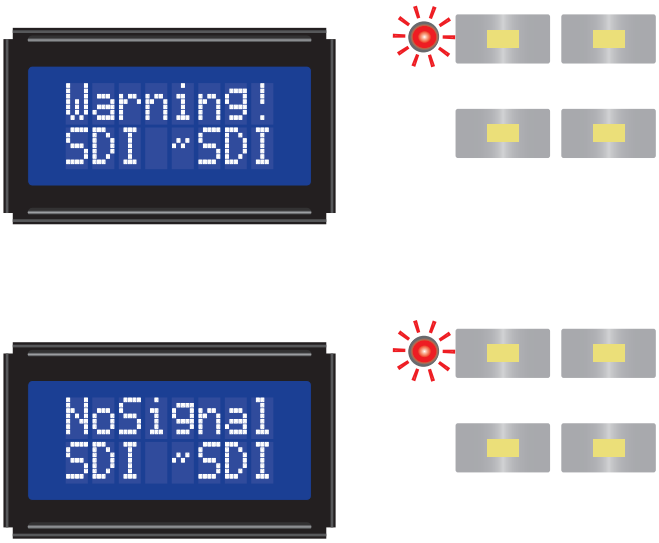



STATUS mode

When you turn on the device and if it is properly connected, the status is displayed.

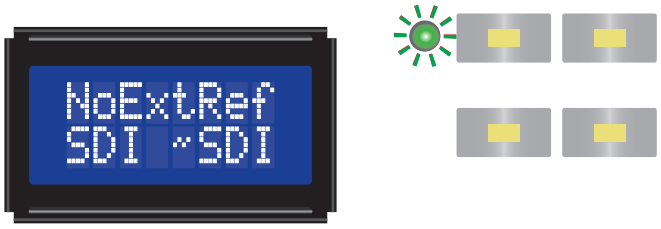
1. OK/SAVE push button - enters the submenu / saving
2. STATUS LED:
   - **GREEN** - the device is in normal mode
   - **GREEN flashing** - no external reference
   - **RED flashing** - has a external reference, but there is no input signal
   - **RED** - **GREEN flashing** - no external reference and input signal
   - **ORANGE** - freeze function is on
   - **RED-ORANGE flashing** - freeze function is on and no input signal
   - **GREEN-ORANGE flashing** - freeze function is on and no external reference
   - **RED-GREEN-ORANGE flashing** - freeze function is on and no input signal and external reference
3. Display
4. MENU/BACK push button - enter the menu from status mode / exit from the submenu
5. UP push button / Frame Freeze - choose the value in the submenu / freezes the image in the status mode
6. DOWN push button - choose the value in the submenu

## ERRORS WITH CONNECTIVITY AND STATUS




No input signal

If you notice that the LED flashes red, verify that the incoming signal is correct or check if the incoming signal cable is properly connected.




No reference signal

If you notice that the LED flashes green, check if the external reference signal cable is properly connected.

The image is frozen

The status mode, pressing the button "UP", the picture freezes.

## FACTORY SETUP

| | |
|---|---|
| HV BLANK: | PASS ALL |
| H POS: | 00.000µs |
| V POS: | 0 lines |
| ERROR MODE: | FIELD 1 |
| EXT. REF: | BB Analog |
| CHAN 1 SRC: | INPUT 1 |
| CHAN 1 LVL: | 0.00 db |
| CHAN 1 POL: | NORMAL |
| CHAN 2 SRC: | INPUT 2 |
| CHAN 2 LVL: | 0.00 db |
| CHAN 2 POL: | NORMAL |
| CHAN 3 SRC: | INPUT 3 |
| CHAN 3 LVL: | 0.00 db |
| CHAN 3 POL: | NORMAL |
| CHAN 4 SRC: | INPUT 4 |
| CHAN 4 LVL: | 0.00 db |
| CHAN 4 POL: | NORMAL |

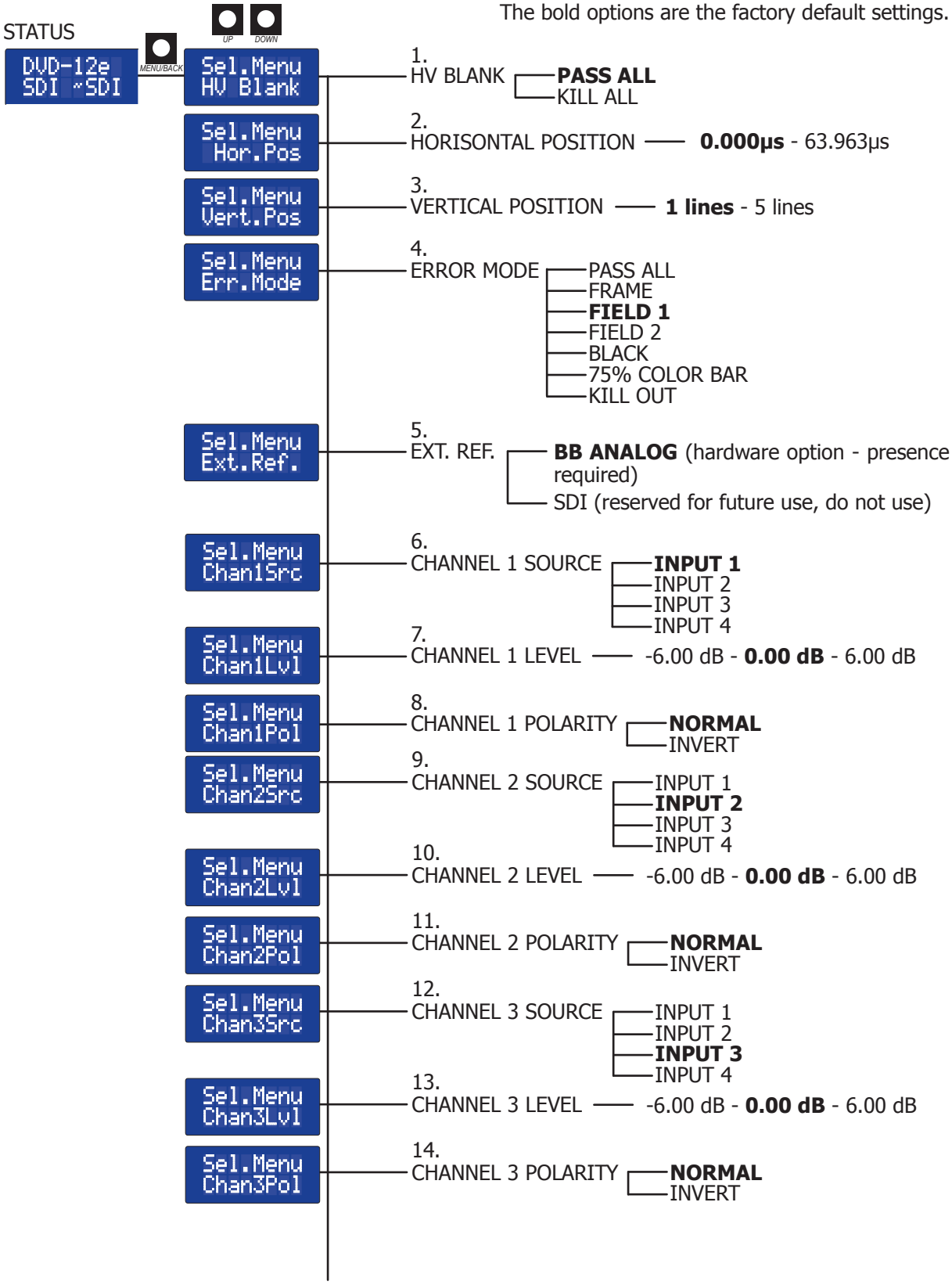
## MENU

To set the device, press the "MENU / BACK" button. Select the menu by pressing the UP / DOWN keys. On the selected menu, press OK.

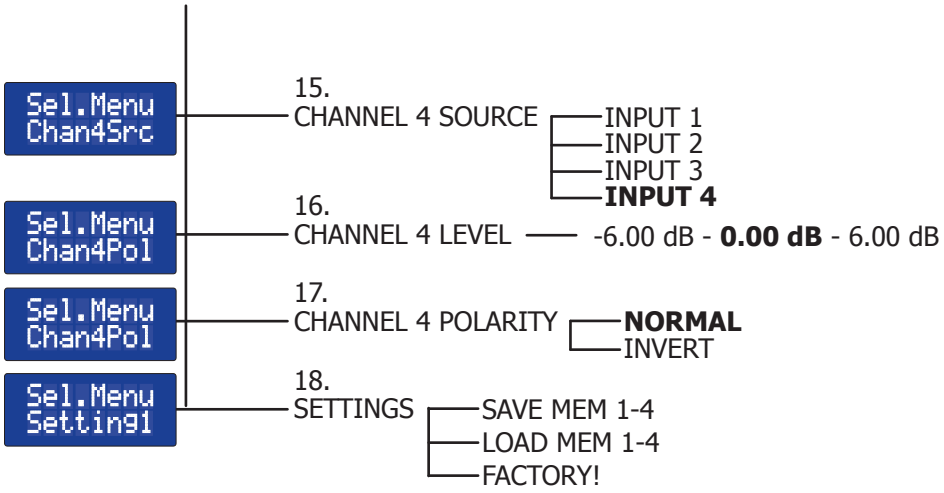
Entering the menu for setting the device

## MENU TREE

The bold options are the factory default settings.




Continued on next page




## 1. HORIZONTAL / VERTICAL BLANKING

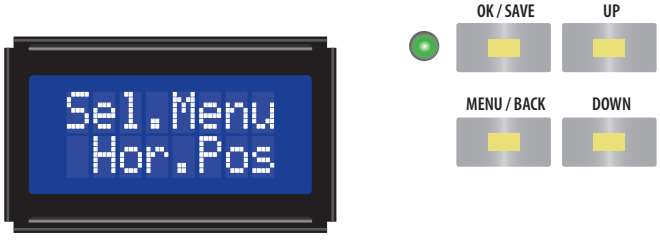
This menu is used for pass / remove information that is contained in the horizontal and vertical blanking.
Choose one of options:
- PASS ALL - allow all the information contained in the horizontal (embedded audio) and vertical blanking (from 6 to 22 lines);
- KILL ALL - remove all information contained in the horizontal and vertical blanking.
The factory setting is PASS ALL.
Select an option by pressing the UP / DOWN keys.

Menu - HV Blank

Once you have selected the option, press the "MENU / BACK" button. Option is temporarily saved.

## 2. HORIZONTAL POSITION

This menu is used to adjust the horizontal phase of the output video signal.
Horizontal phase shifts in the intervals 37ns (half of one pixel) up to a maximum of one video line (63.963μs).
During the change in value, it may cause short-term image disturbance in monitor due to the transition to a new time.
The factory setting is 0.000μs.
Select an option by pressing the UP / DOWN keys.




Menu - Horisontal position

Once you have selected the option, press the "MENU / BACK" button. Option is temporarily saved.

## 3. VERTICAL POSITION

This menu is used to adjust the vertical phase of the output video signal.
The vertical delay is adjusted in increments of one video line, from 0 up to the 624.
The factory setting is 0 lines.
Select an option by pressing the UP / DOWN keys.

Menu - Vertical position

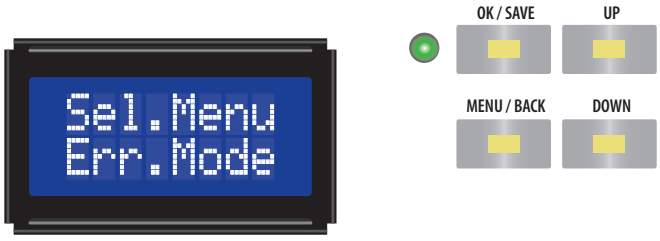
Once you have selected the option, press the "MENU / BACK" button. Option is temporarily saved.

## 4. ERROR MODE

This menu is used to set how the product behaves during a fault in the signal.
Select an option:

- PASS ALL - device pass signal no matter how bad signal is;
- FRAME - the device will freeze the last good picture due to poor incoming video signal;
- FIELD 1 - the device will freeze in the first field due to poor incoming video signal;
- FIELD 2 - the device will freeze the second field, due to poor incoming video signal;
- BLACK - the unit will generate a black image, due to poor incoming video signal;
- 75% COLOR BAR - the unit will generate a color bar, due to poor incoming video signal;
- KILL OUT - device will cancel the signal at the output due to poor incoming video signal;

The factory setting is FIELD 1.
Select an option by pressing the UP / DOWN keys.




Menu - Error mode

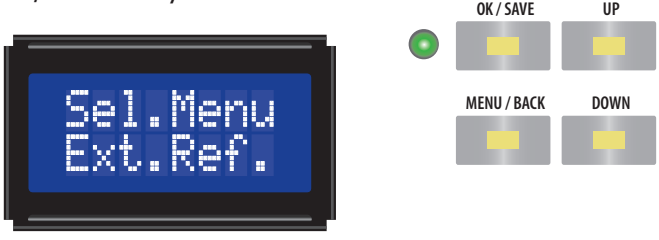
Once you have selected the option, press the "MENU / BACK" button. Option is temporarily saved.

## 5. EXTERNAL REFERENCE

This menu is used to select externe reference.
Select an option:

- BBANALOG - analog reference (hardware option - presence required);
- SDI - digital reference (reserved for future use, do not use);

The factory setting is BBANALOG.
Select by pressing the UP / DOWN keys.

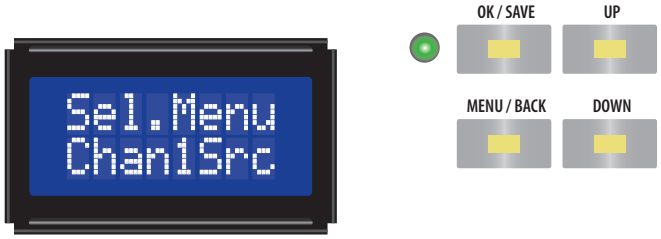



Menu - External reference

Once you have selected the option, press the "MENU / BACK" button. Option is temporarily saved.

## 6. CHANNEL 1 SOURCE

This menu is used to determine the signal source for channel 1.
The options are: INPUT 1, INPUT 2, INPUT 3 INPUT 4.
The default setting is INPUT 1.
Select an option by pressing the UP / DOWN keys.

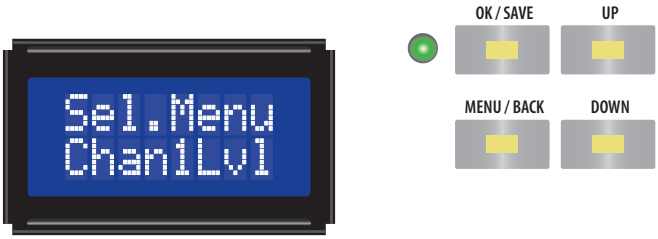



Menu - Channel 1 Source

Once you have selected the option, press the "MENU / BACK" button. Option is temporarily saved.

## 7. CHANNEL 1 LEVEL

This menu is used to determine the signal level for channel 1.
The options are: -6dB to 6dB
The default setting is 0dB.
Select an option by pressing the UP / DOWN keys.

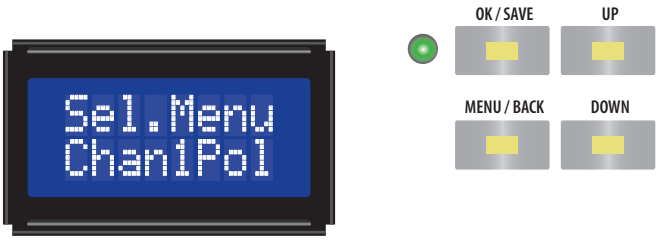



Menu - Channel 1 Level

Once you have selected the option, press the "MENU / BACK" button. Option is temporarily saved.

## 8. CHANNEL 1 POLARITY

This menu is used to determine the signal polarity for channel 1.
Options are: NORMAL and INVERT
The default setting is NORMAL.
Select an option by pressing the UP / DOWN keys.

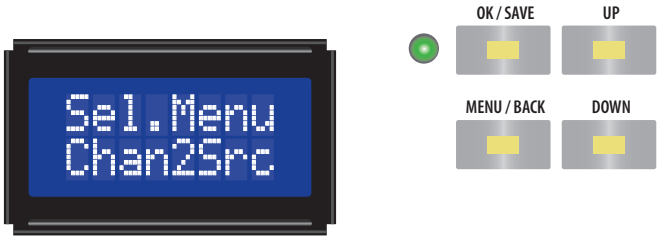



Menu - Channel 1 Polarity

Once you have selected the option, press the "MENU / BACK" button. Option is temporarily saved.

## 9. CHANNEL 2 SOURCE

This menu is used to determine the signal source for channel 2.
The options are: INPUT 1, INPUT 2, INPUT 3 INPUT 4.
The default setting is INPUT 2.
Select an option by pressing the UP / DOWN keys.

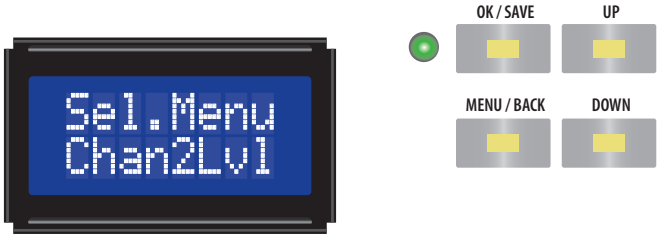



Menu - Channel 2 Source

Once you have selected the option, press the "MENU / BACK" button. Option is temporarily saved.

## 10. CHANNEL 2 LEVEL

This menu is used to determine the signal level for channel 2.
The options are: -6dB to 6dB
The default setting is 0dB.
Select an option by pressing the UP / DOWN keys.

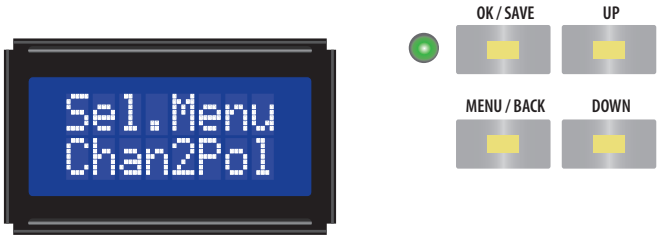



Menu - Channel 2 Level

Once you have selected the option, press the "MENU / BACK" button. Option is temporarily saved.

## 11. CHANNEL 2 POLARITY

This menu is used to determine the signal polarity for channel 2.
Options are: NORMAL and INVERT
The default setting is NORMAL.
Select an option by pressing the UP / DOWN keys.

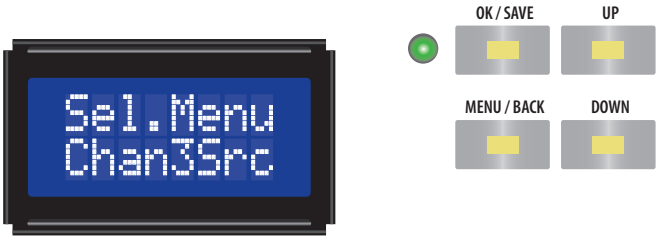



Menu - Channel 2 Polarity

Once you have selected the option, press the "MENU / BACK" button. Option is temporarily saved.

## 12. CHANNEL 3 SOURCE

This menu is used to determine the signal source for channel 3.
The options are: INPUT 1, INPUT 2, INPUT 3 INPUT 4.
The default setting is INPUT 3.
Select an option by pressing the UP / DOWN keys.

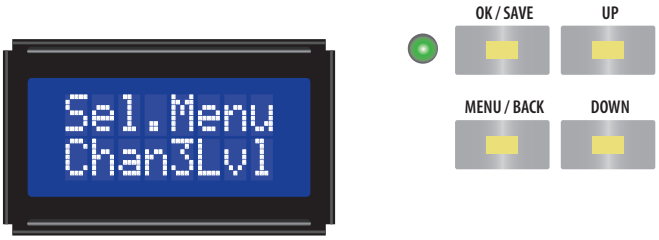



Menu - Channel 3 Source

Once you have selected the option, press the "MENU / BACK" button. Option is temporarily saved.

## 13. CHANNEL 3 LEVEL

This menu is used to determine the signal level for channel 3.
The options are: -6dB to 6dB
The default setting is 0dB.
Select an option by pressing the UP / DOWN keys.

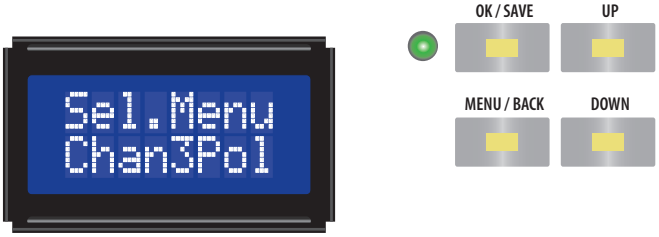



Menu - Channel 3 Level

Once you have selected the option, press the "MENU / BACK" button. Option is temporarily saved.

## 14. CHANNEL 3 POLARITY

This menu is used to determine the signal polarity for channel 3.
Options are: NORMAL and INVERT
The default setting is NORMAL.
Select an option by pressing the UP / DOWN keys.




Menu - Channel 3 Polarity

Once you have selected the option, press the "MENU / BACK" button. Option is temporarily saved.

## 15. CHANNEL 4 SOURCE

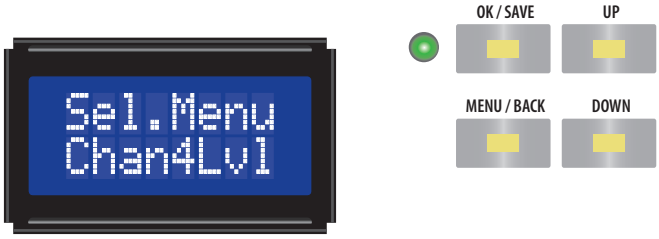
This menu is used to determine the signal source for channel 4.
The options are: INPUT 1, INPUT 2, INPUT 3 INPUT 4.
The default setting is INPUT 4.
Select an option by pressing the UP / DOWN keys.

Menu - Channel 4 Source

Once you have selected the option, press the "MENU / BACK" button. Option is temporarily saved.

## 16. CHANNEL 4 LEVEL

This menu is used to determine the signal level for channel 4.
The options are: -6dB to 6dB
The default setting is 0dB.
Select an option by pressing the UP / DOWN keys.

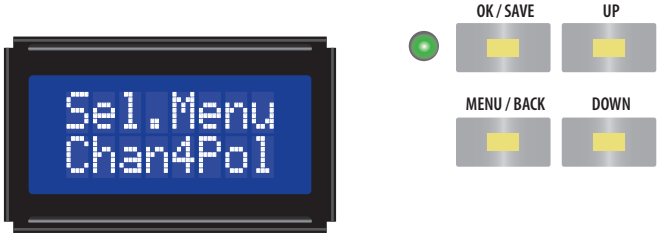



Menu - Channel 4 Level

Once you have selected the option, press the "MENU / BACK" button. Option is temporarily saved.

## 17. CHANNEL 4 POLARITY

This menu is used to determine the signal polarity for channel 4.
Options are: NORMAL and INVERT
The default setting is NORMAL.
Select an option by pressing the UP / DOWN keys.




Menu - Channel 4 Polarity

Once you have selected the option, press the "MENU / BACK" button. Option is temporarily saved.

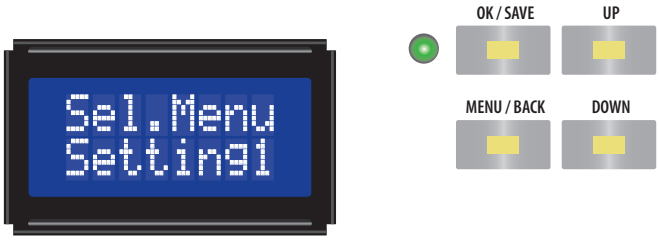
# 18. SETTINGS

After setup within the available menu options, it is temporarily recorded in the memory.
The number next to "Setting" means that the bank is loaded into memory.

When the device is set, select SETTING menu, press the "OK / SAVE" to open the options menu and select one of four banks to record: SaveMem1, SaveMem2, SaveMem3 and SaveMem4. The device can record 4 different settings.
After selecting a bank press "OK / SAVE". The display will print "SAVED".
If you want to stay in this menu, press the UP / DOWN keys, and to exit the MENU / BACK button.

In this menu, there are options: LoadMem1, LoadMem2, LoadMem3 and LoadMem4 or options to load settings.
After selecting a bank press "OK / SAVE". The display will print "LOADED".
If you want to stay in this menu, press the UP / DOWN keys, and to exit the MENU / BACK button.

Option FACTORY! set default settings in the currently active bank.
Press the "OK / SAVE". On display will print 'RESETED. "
If you want to stay in this menu, press the UP / DOWN keys, and to exit the MENU / BACK button.




Menu - Settings

## NOTES